

WHAT IS CLAIMED:

1. A method for determining an Internet address for an entity, comprising:
 - providing an identifier corresponding to the entity;
 - requesting that the identifier be resolved into an Internet address corresponding to the entity;
 - 5 consulting a entity identifier portability database using the identifier to determine a network operator associated with the entity;
 - providing from the entity identifier portability database a network identifier corresponding to the network operator associated with the entity; and
 - using the network identifier in a process of resolving the identifier into the corresponding Internet address.
2. The method in claim 1, further comprising:
 - establishing a communication session with the entity using the corresponding Internet address.
3. The method in claim 2, wherein the communication session includes one or more of the following applications: voice over IP, web surfing, e-mail, video conferencing, video on demand, audio on demand, intra-network access, and electronic gaming either with or without a circuit-switched voice communication.
4. The method in claim 1, wherein the identifier is entered by a calling user, the method further comprising:
 - the calling user generating a telephone query for the identifier and providing the telephone query to a domain name system (DNS) server.
5. The method in claim 4, wherein the identifier is a telephone number and the entity identifier database is a telephone number portability database.
- 25 6. The method in claim 5, wherein the telephone number portability database is a mobile network number portability database.

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7. The method in claim 5, wherein the telephone number portability database is a fixed network number portability database.

8. The method in claim 5, wherein the telephone number portability database is an intelligent network number portability database.

5 9. The method in claim 1, wherein the entity identifier portability database is consulted using a message that conforms with a protocol consistent with that entity identifier portability database.

10. The method in claim 1, wherein network identifier is a network prefix.

11. The method in claim 10, wherein a first server uses the network prefix to send a entity identifier resolution request to a second server associated with the entity's network operator, the second server resolving the identifier into the corresponding Internet address associated with the entity and returning the corresponding Internet address to a calling entity via the first server.

12. The method in claim 11, wherein the identifier is a telephone number and the entity identifier database is a telephone number portability database, and wherein the calling entity generates a first telephone number query for the telephone number and provides the first telephone number query to the first server, the method further comprising:

20 after receiving the network prefix, the first server including the network prefix in the first telephone number query to generate a second telephone number query.

13. The method in claim 12, further comprising:

the first server sending the second telephone number query to the second server, and

25 the second server returning a naming authority pointer (NAPTR) record with a uniform resource identifier (URI) corresponding to the called entity.

14. The method in claim 13, further comprising:
the first server sending the second telephone number query to the second server,
and
the second server returning a NAPTR record with plural uniform resource
5 identifiers (URIs) corresponding to the called entity.

15. A method for resolving a telephone number corresponding to an entity to
be contacted into an Internet address using a domain name system (DNS) server and a
telephone number portability database.

16. The method in claim 15, wherein the DNS server accesses the telephone
number portability database to determine a network operator serving the entity and sends a
DNS resolution query for the telephone number to a DNS server associated with the
serving network operator.

17. The method in claim 15, wherein the telephone number portability database
is a mobile network number portability database.

18. The method in claim 15, wherein the telephone number portability database
is a fixed network number portability database.

19. The method in claim 15, wherein the telephone number portability database
is an intelligent network number portability database.

20. A method for determining an Internet address corresponding to a entity
with which a communication session is to be established, comprising:
entering at a mobile node a telephone number of the entity;
the mobile node converting the telephone number into a telephone number
(ENUM) query;
the mobile node sending the ENUM query over a radio interface to be provided to
25 a first server requesting resolution of the telephone number to a corresponding Internet
address;

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the first server analyzing the message, accessing a telephone number portability database, and retrieving therefrom a network identifier for a network associated with the entity;

5 the first server then sending the message to a second server associated with the identified network requesting resolution of the telephone number to return corresponding Internet address information; and

the second server providing the corresponding Internet information to the first server.

21. The method in claim 20, wherein the mobile node is attached to a GPRS network and sends an ENUM message to an SGSN, the method further comprising:

the SGSN forwarding the ENUM message to the first DNS;

the first DNS extracting from the ENUM message the telephone number and sending the telephone number to the telephone number portability database, and

the telephone number portability database returning to the first DNS a network prefix identifying the network associated with the entity.

22. The method in claim 21, further comprising:

the first DNS including the network prefix in the ENUM message and sending the ENUM message to the second DNS server.

23. The method in claim 22, further comprising:

20 the second DNS server determining the corresponding Internet address information for the entity and returning the Internet address information to the first DNS in the form of a naming authority pointer (NAPTR) record.

24. The method in claim 23, further comprising:

the first DNS sending the NAPTR record to the SGSN, and

25 the SGSN sending the NAPTR record to the mobile node.

25. The method in claim 24, further comprising:
the mobile node using the NAPTR record to establish an Internet session with the
entity.

26. The method in claim 20, wherein the entity is another mobile node and the
5 number portability database is a mobile number portability database.

27. The method in claim 26, further comprising:
the first server constructing an emulated signaling system number 7 (SS7) database
query with the telephone number using a mobile application part (MAP) protocol message.

28. The method in claim 20, wherein the entity is a fixed station and the telephone number portability database is an intelligent network database.

29. The method in claim 28, further comprising:
the first server constructing an emulated signaling system number 7 (SS7) database
query with the telephone number using a intelligent network application part (INAP)
protocol message.

30. A server for assisting in determining an Internet address for an entity in response to a request that an identifier associated with the entity be resolved into an Internet address corresponding to the entity, comprising:

a resolution processor for handling the request;

a memory, coupled to the resolution processor, for storing information related to resolving an identifier into an Internet address; and

a identifier portability controller for consulting an entity identifier portability database with the identifier and obtaining from the entity identifier portability database a network identifier corresponding to a network operator associated with the entity,

wherein resolution processor is configured to use the network identifier in a

25 process of resolving the identifier into the corresponding Internet address.

31. The server in claim 30, wherein the resolution extension handler is configured to use a protocol associated with the entity identifier number portability database when consulting the entity identifier portability database.

32. The server in claim 31, wherein the entity identifier portability database is a mobile network number portability database.

33. The server in claim 31, wherein the entity identifier portability database is a fixed network number portability database.

34. The server in claim 31, wherein the entity identifier portability database is an intelligent network number portability database.

35. The server in claim 30, wherein the entity identifier portability database is a telephone number portability database, and wherein the request is a first telephone number (ENUM) query corresponding to the telephone number.

36. The server in claim 30, wherein the resolution processor is configured to include the network identifier in the first ENUM query to generate a second ENUM query.

37. The server in claim 36, wherein the resolution processor is configured to send the second ENUM query to a second server and receive from the second server a naming authority pointer (NAPTR) record with a uniform resource identifier (URI) corresponding to the entity.

38. The server in claim 30, wherein network identifier is a network prefix and the resolution processor is configured to use the network prefix to send a entity identifier resolution request to another server associated with the entity's network operator to permit resolution of the identifier into the corresponding Internet address associated with the entity, the resolution processor being further configured to receive from the other server information related to the corresponding Internet address information and return the corresponding Internet address information to a requesting node.

39. The server in claim 30, wherein the memory includes a database of domain names and corresponding Internet addresses and Internet naming software, further comprising:

a dynamic host configuration processor coupled to the resolution processor.

5 40. A computer-readable product comprising:

a computer usable medium having computer readable code embodied therein including:

code to receive an identifier associated with an entity to be contacted over the Internet ad a request that the identifier be resolved into an Internet address corresponding to the entity;

code to consult an entity identifier portability database with the identifier;

code to obtain from the entity identifier portability database a network identifier corresponding to network operator associated with the entity; and

code to provide the network identifier for use in resolving the identifier into the corresponding Internet address.

41. The computer-readable product in claim 40, wherein the computer readable code further includes code to communicate with other code in a domain naming system (DNS) server.

42. The computer-readable product in claim 40, wherein the computer readable code includes code to communicate with the entity identifier portability database using a protocol associated with the entity identifier portability database.

43. The computer-readable product in claim 42, wherein the entity identifier portability database is a mobile telephone number portability database, and wherein the computer readable code includes code to communicate with the mobile telephone number portability database using a mobile applications protocol (MAP).

44. The computer-readable product in claim 42, wherein the entity identifier portability database is an intelligent network telephone number portability database, and

wherein the computer readable code includes code to communicate with the intelligent network telephone number portability database using an intelligent network applications protocol (INAP).

45. A system for resolving a telephone number corresponding to a called entity
5 into an Internet address, comprising:

user equipment for generating a message including the telephone number;

a first domain naming system (DNS) server for receiving the message and for generating a database query using the telephone number; and

10 a telephone number portability database for receiving the database query and for providing to the DNS server information regarding the telephone number,

15 wherein the first DNS server is configured to use the information to facilitate resolution of the telephone number into a corresponding Internet address.

46. The system in claim 45, wherein the first DNS server is configured to query the telephone number portability database to determine a network operator serving the called entity.

47. The system in claim 45, wherein the first DNS server includes a resolution handler for querying the telephone number portability database to determine a network operator serving the called entity.

48. The system in claim 45, wherein the telephone number portability database
20 is a fixed network number portability database.

49. The system in claim 45, wherein the telephone number portability database is an intelligent network number portability database.

50. The system in claim 45, wherein the telephone number portability database is a mobile network number portability database.

51. The system in claim 50, wherein the first DNS server is configured to send the message to a second DNS server associated with the identified network requesting resolution of the telephone number to return a corresponding Internet address; and
wherein the second DNS server is configured to provide the corresponding
5 Internet address to the first DNS server.

52. The system in claim 51, wherein the user equipment is a mobile node attached to a GPRS network and is configured to send a telephone number (ENUM) message to an SGSN, the SGSN being configured to forward the ENUM message to the first DNS server which is configured to extract from the ENUM message the telephone number and to query the mobile network number portability database with the telephone number.

53. The system in claim 52, wherein the first DNS is configured to include the network prefix in the ENUM message and to send the ENUM message to the second DNS server.

54. The system in claim 53, wherein the second DNS server is configured to determine the corresponding Internet address for the entity and to return the Internet address to the first DNS in the form of a naming authority pointer (NAPTR) record.

55. The system in claim 54, wherein the first DNS is configured to send the NAPTR record to the SGSN, and the SGSN is configured to send the NAPTR record to
20 the user equipment.

56. The system in claim 55, wherein the user equipment is configured to use the NAPTR record to establish an Internet session with the entity.

57. The system in claim 52, wherein the first DNS server is configured to construct an emulated signaling system number 7 (SS7) database query with the telephone
25 number using a mobile application part (MAP) protocol message.

58. The system in claim 45, wherein the entity is a fixed station and the telephone number portability database is an intelligent network database.

59. The system in claim 59, wherein the first DNS server is configured to construct an emulated signaling system number 7 (SS7) database query with the telephone number using a intelligent network application part (INAP) protocol message.

60. A processor comprising processing circuitry and memory configured to assist in a process of resolving a telephone number corresponding to an entity to be contacted into an Internet address using resources in a domain name system (DNS) and resources in a telephone number portability database.

61. The processor in claim 60, wherein the processing circuitry is configured to access the telephone number portability database to determine a network operator serving the entity and to send a DNS resolution query for the telephone number to a DNS server associated with the serving network operator.

62. The processor in claim 60, wherein the telephone number portability database is a mobile network number portability database.

63. The processor in claim 60, wherein the telephone number portability database is a fixed network number portability database.

64. The processor in claim 60, wherein the telephone number portability database is an intelligent network number portability database.

20 65. A method for determining a type of DNS query for an entity resolution process, comprising:

receiving an identifier corresponding to an entity in a first DNS query;

consulting a entity identifier portability database using the identifier to determine a network operator associated with the entity;

25 providing from the entity identifier portability database a network identifier corresponding to the network operator associated with the entity; and

using the network identifier in a process of generating a second DNS query for resolving the identifier into a corresponding Internet address.

66. The method in claim 65, wherein the first and the second DNS queries use ENUM messages belonging to a same tier domain.

67. The method in claim 66, wherein distinguishing between the first and the second DNS queries triggers the number portability consultation using a NAPTR resolution process.

68. The method in claim 67, wherein the distinguishing relates to detection of the network identifier and an entity identifier imbedded within the ENUM message.

69. The method in claim 65, wherein the first and the second DNS queries use the ENUM messages belonging to two separate tier domains.

70. The method in claim 69, wherein the first DNS query recognized by the first tier triggers the number portability consultation and the second DNS query recognized by the second tier triggers a NAPTR resolution process.